ROUND 11 CAPITAL PROJECT NOMINATION FORM
LAKE TAHOE FEDERAL SHARE EIP CAPITAL PROJECTS
APPENDIX K

Project Name:	Mountain Yellow-legged Frog Recovery Project	**EIP Number: (*Required*)**	593
Federal Agency Sponsor: (*Required*)	US Fish and Wildlife Service	**Contact:**	Chad Mellison
Threshold:	W	**Phone Number:**	775.861.6327
Threshold Standard:	W2 Wildlife Goal No. 1	**Email:**	Chad_Mellison@fws.gov
FUNDING REQUESTED IN THIS ROUND:	**$** 80,000		

Federal Share EIP Consideration

Select "yes" or "no" for each question. If you have a "yes" response, briefly describe. ***Projects must meet one or more of these 5 items.***

1. **Does the project involve federal land? If yes, is the federal land involved important to successful implementation of the project?** — ***Yes*** ☒ ***No*** ☐

This project will occur at land managed by the Lake Tahoe Basin Management Unit. The goal of this project is to restore high alpine lake habitat within Desolation Wilderness for Sierra Nevada (mountain) yellow-legged frogs (Rana sierrae; SNYLF). Implementation activities will occur at seven lakes.

2. **Is this project identified in the EIP? If yes, please ensure the EIP number is identified in the above project information box. If no, provide a description of the projects contribution to the EIP program.** — ***Yes*** ☒ ***No*** ☐

3. **Does the project involve the conservation of a federal or regional threatened, rare, endangered, or special interest species?** — ***Yes*** ☒ ***No*** ☐

SNYLF is a candidate species for listing under the Endangered Species Act (ESA). On June 24, 2007, the US Fish and Wildlife Service (FWS) published a 12-month finding on a petition to list the Sierra Nevada distinct population segment of the SNYLF (Federal Register Vol. 72, No. 121). In its finding, the FWS determined that SNYLF was warranted for listing, but precluded due to higher priority species listing determinations for other candidate species. The Sierra Nevada yellow-legged frog is listed as Sensitive on the Region 5 Regional Forester's Sensitive Species List (USDA Forest Service 1998). Because SNYLF has been extirpated from over 90% of its historic range, there is a need to restore the species habitat and prevent its range-wide extinction. To date, range-wide conservation activities for SNYLF have been accomplished in a multi-agency format involving the FWS, National Park Service (NPS), US Forest Service (USFS), CDFG and academic institutions such as the University of California, Berkeley and Sierra Nevada Aquatic Research Laboratory.

No

4. **Does the project involve an identified federal interest such as the detection and eradication of non-native invasive species (aquatic or terrestrial)? If yes, identify the species?** ☒ ☐

Of the 130 formerly fishless lakes located in Desolation Wilderness, 98 have been stocked with non-native salmonids including all of the large, deep lakes that provide important habitat for SNYLF (USDA 1998). The most common fish species stocked in the lakes have been brook trout (Salvelinus fontinalis) and rainbow trout (Oncorhynchus mykiss). These species, although considered desireable non-native species in some watersheds to provide recreational fisheries, have caused drastic declines in SNYLF populations throughout its historic range and, thus, considered an invasive species in habitat identified for the conservation of SNYLF.

5. **Does the project contribute to supporting implementation of capital projects in the EIP? Such projects that fulfill this function would include technical assistance, data management, and/or resource inventories?**

Yes	***No***
☐	☒

Check all Capital Focus Area(s) that apply:

☒ 1. **Watershed and Habitat Improvement**
☐ 2. **Forest Health**
☐ 3. **Air Quality and Transportation**
☐ 4. **Recreation and Scenic**

Check all that apply (must meet a minimum of one category):

☐ 1. **Continued emphasis on forest ecosystem health/fuels reduction projects considering the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuels Reduction and Wildfire Prevention Strategy.**

☒ 2. **Continued implementation of projects approved in Rounds 5 through 10 which implement the EIP. Project proposal should clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 10.**

List Rounds and funding:

Round 7 (BLM Project No. F079) - $50,000
Round 8 (BLM Project No. F115) - $40,000
Round 9-20 (BLM Project No. W007) - $90,000

☐ 3. **Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel).** ***NOTE: If "yes", then please respond to questions in the accomplishments section of the nomination proposal.***

☒ 4. **Control of aquatic invasive species and prevention and/or detection of new aquatic invasive species.**

Project Nomination Proposal Outline

Project Summary (a brief summary which clearly describes the proposed project –maximum 200 words)

- Summarize ONLY this Round 11 project**.**

Round 11 funding will be used to complete eradication of brook trout in Lucille, Ralston, and Tamarack Lakes. Manual eradication will be accomplished in these lakes by placement of monofilament gillnets. The project also involves an effectiveness monitoring component, which has an objective to insure no fish are present in the other project area lakes including Cagwin, Margery, LeConte, and Jabu Lakes. In addition, if natural recolonization of SNYLF individuals does not occur in the known fishless lakes by 2012, translocation efforts may begin. The most current research will be utilized in these efforts to insure the high potential for success. Additionally, data will continue to be collected on the disease status of any frogs located in the project area and sent to a certified laboratory to determine chytrid load and prevalence, if any.

Project Description

Introduction

- Provide project background which explains the situation and state the problem and how it will be addressed.

Note: *Focus needs to be the project in Round 11 not a history of an ongoing project or program.*

The US Fish and Wildlife Service, in partnership with California Department of Fish and Game, US Forest Service Lake Tahoe Basin Management Unit and El Dorado National Forest intends to finalize implementation efforts for the Sierra Nevada Yellow-legged Frog Recovery Project in identified lakes located in Desolation Wilderness. Implementation efforts will be focused on a series of lakes located on the Lake Tahoe Basin Management Unit (LTBMU) including Tamarack Lake, Ralston Lake, Cagwin Lake, Lake Lucille, Lake Margery and associated ponds and streams. Efforts will focus on completing eradication efforts in Tamarack, Ralston, and Lucille Lakes. Translocation of tadpoles and/or egg masses may begin in Leconte, Jabu, Margery and Cagwin Lakes (pending monitoring results). In addition, we intend to continue working with researchers from a certified lab on the disease status of Desolation Wilderness amphibian populations.

A number of known and potential range-wide threats affecting *R. sierrae* population viability have been identified by the Interagency Mountain Yellow-legged Frog Working Group. These include: disease (chytrid), introduced fishes and other predators, pollution (acid deposition, airborne contaminants, etc.), livestock grazing, recreational activities, water development and diversion, vegetation and fuels management, and any other activities resulting in habitat loss and fragmentation. It is recognized that synergisms between two or more of the above mentioned factors may be driving *SNYLF* declines (Blaustein and Kiesecker, 2002, Kiesecker, 2002, Ponds et al., 2006). Many of the factors causing amphibian declines are daunting because of the limited ability to reverse changes caused by these stressors over time scales relevant to current conservation efforts. However, the manual removal of non-native trout, a known predator, is reversible and has documented beneficial effects on population size and dispersal (Knapp et al. 2007, Bradford et al. 1993; Knapp 1996; Hecnar and M'Closkey 1997; and Knapp and Matthews 2000; Knapp et al.2006).

Non-native game fish were introduced by fish management agencies throughout the 19th century. Many high elevation lakes, ponds and streams, which were historically fishless, were targeted as areas to increase recreational fishing opportunities. Introduced salmonid

species (specifically brook trout) thrived in these environments and soon targeted native amphibians as prey. These fish are considered aquatic invasive species in habitats currently or potentially occupied by SNYLF. Due to the complex life history pattern SNYLF, which includes a 2-4 year metamorph cycle and an additional 3-5 years post-metamorph to reach sexual maturity, they are extremely susceptible to fish predation at early life form stages (eggs, tadpoles, and juveniles).

The California Department of Fish and Game began aerial stocking in the project areas in the 1950 and ceased all efforts in 2000 (Figure 1). After ceasing stocking efforts, the Department of Fish and Game began a detailed assessment per watershed basin of the impacts of stocking to native aquatic species, specifically amphibians. The lakes within the project area were identified as "restoration lakes" and will no longer be stocked in the future.

Stocking records (from: California Department of Fish and Game)

Waterbody	**Initial Stock Year**	**Final Stock Year**	**Species Stocked**
Cagwin Lake	1950	1999	Rainbow Trout
Lake Lucille	1950	1974	Brook Trout
Margerry Lake	1950	2000	Brook/Rainbow Trout
Ralston Lake	1950	2000	Rainbow/Brook Trout
Tamarack Lake	1950	2000	Brook/Rainbow Trout
LeConte Lake	1951	1999	Brook/Rainbow Trout
Jabu Lake	1962	2000	Brook/Golden Trout

Translocation efforts have begun in Yosemite National Park, Sequoia-Kings Canyon National Park, and Humphreys Basin on the Sierra National Forest. Translocations have been completed with all age classes as well as understanding current disease status. Thus far, efforts in translocation suggest that if the source population is chytrid-positive the reintroduction success rate is relatively low. If chytrid is present at the reintroduction sites, the reintroduction success will also be low. However, success has been high when chytrid is absent, regardless of the age class or the number of animals moved (R. Knapp Pers.comm.). Results from these efforts and others will be used if translocation efforts are deemed suitable in Desolation Wilderness.

Chytrid and genetic testing through an agreement with US Forest Service LTB and University of California at Berkeley to assist with assessing chytrid, fitness, and genetic integrity occurred in 2006 and 2007. Results from the analysis informed managers that chytrid is present in Desolation Wilderness populations. These preliminary results also suggest that the prevalence and load of the disease is relatively low and monitoring efforts suggest that the Desolation Wilderness population is stable even though some frogs are chytrid positive. Continued investigation on the overall health of this meta-population is needed, as is the advice from the research community, prior to the onset of translocation efforts.

- Describe what Round 11 is specifically funding; list the number of years the requested funding will cover; briefly describe how this project links into previous and future projects, and identify other round funding.

NOTE: *Focus should be on finishing current/phased projects. If project is new in Round 11, clearly identify if the project is for planning or implementation and how it will be completed with Round 11 funds. Identify if Round 12 or other funds will be needed to complete the project. Please identify total non-SNPLMA funds that are being contributed/dedicated to the proposed Round 11 project and the source of those funds.*

Round 11 would fund the following action items:

- Complete non-native fish eradication efforts in Tamarack, Ralston, and Lucille Lakes. With the aid of Round 11 funding these lakes are projected to be fishless by 2013.

- Conduct an effectiveness monitoring component, which has an objective to insure no fish are present in the other project area lakes including Cagwin, Margery, LeConte, and Jabu Lakes. In addition, if natural recolonization of SNYLF individuals does not occur in the known fishless lakes by 2012, translocation efforts may begin. The most current research will be utilized in these efforts to insure the high potential for success. Additionally, data will continue to be collected on the disease status of any frogs located in the project area and sent to a certified laboratory to determine chytrid load and prevalence, if any.

- Continued investigation of the current disease status known to negatively affect amphibians within the project area. Swabs taken from amphibians residing adjacent and/or in waterbodies will be sent to a certified laboratory to determine the prevalence and load of chytrid.

- If natural recolonization of SNYLF individuals does not occur in the known fishless lakes by 2012, Round 11 funding would be used to support translocation efforts. The most current research will be utilized in these efforts to insure the high potential for success (i.e. moving subadults and/or egg masses from adjacent populations). Implementation of translocation will occur at one to four lakes within the project area.

Round 7: Funding was used to complete first year of pre-project monitoring. These monitoring efforts determined the type of fish species present in the lakes, if suitable habitat was present (based on habitat requirements of SNYLF), where SNYLF were located within the project area, and the current disease status.

Round 8: Funding was used to complete the second year of pre-project monitoring. In addition to the above mentioned efforts, genetic testing was completed on SNYLF in the project area.

USFS appropriated dollars were used in 2008 to complete the NEPA analysis and decision document for the Sierra Nevada Yellow-legged Frog Restoration Project.

Round 9: Funding was used to implement eradication efforts in all seven lakes in the project area. Funds were also used to purchase equipment for removal efforts.

- Describe the "readiness" of this project to move forward (urgency, capacity, capability, environmental documentation, interagency agreements, etc)

The NEPA decision for the project was signed in 2008. Round 9 dollars were used to initiate implementation efforts. These efforts are proving successful as catch rates on non-native trout are significantly lower in target lakes within the project area.

SNYLF faces an uncertain future throughout the Sierra Nevada as it is no longer found in over 90% of its historic habitat. The species has been deemed warranted but precluded from federal listing on the Endangered Species Act. Continued implementation and completion of this project is intended to increase the current population size of SNYLF in Desolation Wilderness and aid in the range-wide conservation efforts to prevent further distribution declines.

- Describe partnerships for this project. (if applicable, project should identify committed/secured partner funding and/or other partner contributions (describe) and how it is integrated into the project)

Partners include: US Fish and Wildlife Service, USFS - Lake Tahoe Basin Management Unit, USFS - Eldorado National Forest, and California Department of Fish and Game. Amphibian researchers at UC Berkeley, UC San Francisco, UC Santa Barbara and Sierra Nevada Aquatic Research Lab have provided continued technical support and will be asked to give critical input during translocation plan development. These partners are part of the larger Mountain Yellow-legged Frog Working Group where conservation efforts are coordinated at the range-wide scale.

Note: *The form requests information about project goals, objectives, accomplishments, and questions the program is designed to answer across several different sections. These issues are closely linked and your individual responses should provide a cohesive description.*

Goal – Purpose and Need ("larger" statement of future expected outcome – usually not measurable)

The goal of the project is to expand the localized range of SNYLF in the Desolation Wilderness by reclaiming historic lake habitat through non-native trout removal and provide aquatic habitat that will allow SNYLF to fulfill all required life history stages.

Objectives (specific measurable statements of action which when completed will move towards achieving the goal)

Note: *Objectives will form the basis for the milestones/deliverables to be identified in Appendix B-8*

- Describe how fulfilling objectives will contribute to the achievement of one or more environmental thresholds (air quality, water quality, soil conservation, vegetation, fisheries, wildlife, scenic, noise, recreation). Provide measures if applicable. For example: acres treated, miles of stream restored for each objective.

Objective 1: Restore 69 acres of SNYLF habitat to historic fishless condition.

Objective 2: If natural recolonization does not occur, encourage recolonization of restored lake habitat by translocating appropriate age-class and number of SNYLF to up to four lakes in the project area.

- Describe the estimated environmental risks from unintended consequences of the proposed project (if applicable)**.**

Not applicable.

Accomplishments

- Describe the anticipated project accomplishments (i.e. products or identifiable environmental benefits being produced or implemented under this project)

Note: *Differentiate between direct and/or primary project effects and secondary and/or overall watershed effects.*

Direct Accomplishments:

- Eradication of non-native trout in seven lakes (69 acres).
- Translocation of SNYLF in up to four lakes within the project area (estimated 25 acres).

Secondary Accomplishments:

- Expansion of the localized range of SNYLF in the Desolation Wilderness.
- Lake and stream habitat within the project area supports a self-sustaining SNYLF population.
- Prevention of federal listing due to the collaborative of efforts of this project and similar projects range-wide.

- Describe how the project results/accomplishments will be communicated and made available to the public.

The information created from this project will be disseminated to three audiences: 1) the general public, 2) other resource agencies, and 3) the broader scientific community. The audiences will be informed respectively through the USFWS and USFS website, public/interagency meetings (i.e. Mountain Yellow-legged Frog Working Group), and peer-reviewed publications.

- If you checked "yes" for the project being consistent with and contributes to TMDL pollutant reductions please consider and integrate the following in the project description:

a) Describe whether, and how, the project demonstrates advanced, alternative, or innovative practices.

Not applicable.

b) If project includes project level monitoring, describe ability of proposed monitoring strategy to contribute to the state of TMDL knowledge. Also describe if purpose of the capital project is to conduct data collection and/or analysis related to Lake Tahoe clarity.

Not applicable.

c) Describe treatment approach for reducing pollutants and/or measures to address connectivity between pollutant sources and Lake Tahoe or its tributaries. Identify target pollutants, and, to the degree feasible, provide quantitative estimates of project effectiveness at reducing pollutant loads (and/or a commitment to provide post-project estimates).

Not applicable.

d) If appropriate, describe whether, and how, the project can be combined or coordinated with other TMDL implementation projects.

Not applicable.

Monitoring

- Describe the project monitoring that will be implemented as part of this project including:

  - List the questions the monitoring program is designed to answer.

Will removal of non-native trout allow for the natural recolonization of historic lake habitat in Desolation Wilderness? Did project implementation change abundance of SNYLF? Is the current prevalence and load of chytrid changing? What is the success rate after translocation efforts (number of each age class and disease status)?

  - Describe any coordination with, or input from, the science community on monitoring and adaptive management that has occurred on the development of this nomination and what changes (if any) to the project were made as a result of this input.

Round 7 and 8 dollars were used to fund UC Berkeley researchers to answer preliminary management questions regarding amphibian disease status and genetic variability. This research coupled with other SNYLF specific research derived from other efforts (i.e. Kings Canyon National Park) will be used to adaptively management SNYLF in the project area.

  - Describe the methods and strategies (i.e. monitoring, research, or both) that will be used to verify whether the project goals and objectives have been met? (*Note: A detailed monitoring plan and/or research plan is not required, however, enough detail must be provided to allow someone that is unfamiliar with the project to understand and evaluate the proposed methods and strategies.*)

Monitoring activities will involve monitoring the success of eradication efforts (insure no fish are recolonize in the project area). SNYLF that naturally recolonize and/or were translocated from donor populations in targeted lakes will be monitored via Visual Encounter Surveys, which will document numbers, spatial distribution and age class.

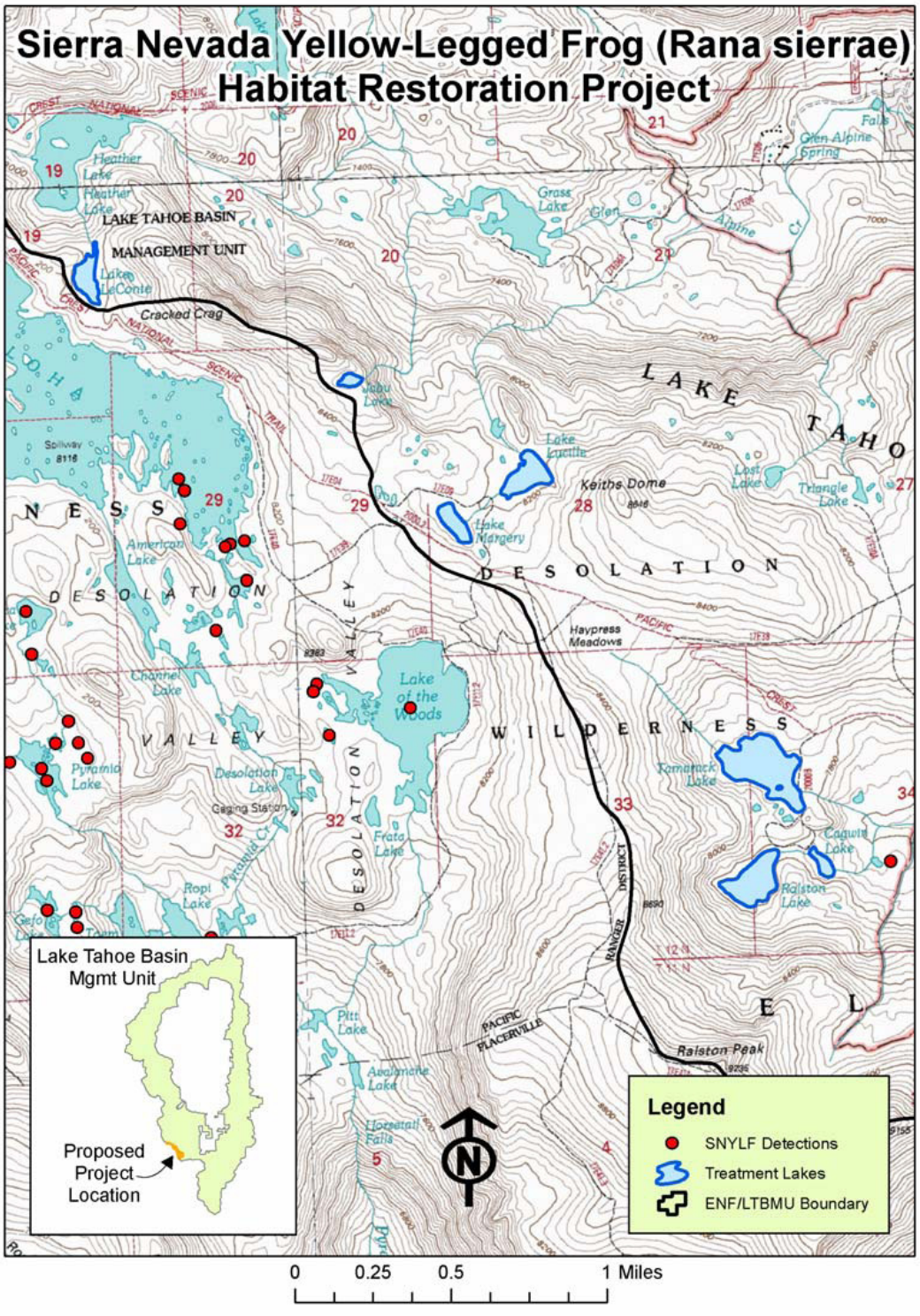
- Describe whether the monitoring or research associated with this project fits into or is part of a larger monitoring or research program.

Monitoring results from this project can be presented at the annual Declining Amphibian Population Task Force meeting and is potentially useful for other agencies and organization currently or planning SNYLF restoration activities.

- Describe how information from the monitoring and/or research will be used to improve the continued performance of the proposed project or future similar projects.

Implementation activities will be continually assessed and project design will be adaptively managed based on results.

Attachments: Project area map.


Sierra Nevada Yellow-Legged Frog (Rana sierrae)
Habitat Restoration Project
LAKE TAHOE BASIN
MANAGEMENT UNIT
Lake LeConte
Cracked Crag
Heather Lake
Grass Lake
Glen Alpine Spring
Falls
Alpine Ct
Yabu Lake
Lake Lucille
Keiths Dome
Lost Lake
Triangle Lake
Lake Margery
American Lake
Haypress Meadows
Lake of the Woods
Channel Lake
Pyramid Lake
Desolation Lake
Gaging Station
Frata Lake
Ropi Lake
Tamarack Lake
Cagwin Lake
Ralston Lake
Ralston Peak
Pitt Lake
Avalanche Lake
Horsetail Falls
Pyramid Ck
RANGER DISTRICT
PACIFIC CREST NATIONAL SCENIC TRAIL
PACIFIC PLACERVILLE
Spillway 8116
LAKE TAHOE
DESOLATION WILDERNESS
DESOLATION VALLEY
Lake Tahoe Basin Mgmt Unit
Proposed Project Location
Legend
SNYLF Detections
Treatment Lakes
ENF/LTBMU Boundary
N
0 0.25 0.5 1 Miles

Appendix B-8

LAKE TAHOE RESTORATION PROJECTS
ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES

Project Name:	Mountain Yellow-legged Frog Recovery Project	Agency:	USFWS
Prepared by:	Chad Mellison	Phone:	775.861.6327
SNPLMA Project #:	W007	EIP #:	593

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and Research Costs (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)	$ 2,400	3 %
2. FWS Consultation – Endangered Species Act	$ 0	0 %
3. Direct Labor (Payroll) to Perform the Project	$ 6,400	8 %
4. Project Equipment (tools, software, specialized equipment, etc.)	$ 0	0 %
5. Travel (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	$ 1,600	2 %
6. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project)	$ 1,600	2 %
7. Cost of Contracts, Grants and/or Agreements to Perform the Project	$ 64,800	81 %
8. Other Direct and Contracted Labor: Agency payroll for the Contracting Officer to do project procurement, COR, Project Inspector, Sec. 106 Consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contracts)	$ 0	0 %
9. Other Necessary Expenses (see Appendix B-9)	$ 3,200	4 %
TOTAL:	$ 80,000	100 %

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Complete fish removal in Lucille, Tamarack, and Ralston Lakes	11/1/2013
Complete two years transolcation efforts in up to four lakes in project area (pending monitoring results).	11/1/2013
Final Completion Date: 8/1/2014	

COMMENTS: Fish and Wildlife will through 81% and keep 19%